

Today's Topics:

>Transceiver Opinions  
    airport security  
Over-voltage protection for mobiles.  
    starter shortwave radios ...

What about for us SWL's ? Re: Tuning dipoles and antennas. (2 msgs)

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Date: Tue, 05 Dec 89 16:00 CST  
From: PAT.DAVIS@mail.admin.wisc.edu  
Subject: >Transceiver Opinions  
Message-ID: <9C5G0042@mail.admin.wisc.edu>

Comment: Processed by UWGATE

to: info-hams%wsmr-simtel20.army.mil@pgd.adp.wisc.edu

In response to the recent inquiry about receiver performance on selected HF rigs.

A local HAM who is a engineer, periodically has club members bring him their radios for testing.. Much of his testing is for performance in strong signal situations and multiple signal situations. I cannot elaborate on his test methods, nor how many radios of X-kind have been tested. I do, however, recall that the Icom IC-751A faired the best in THOSE areas of the last big batch of tests he did.

I can't tell you if that was with stock filters or what.. (One of those rigs had a fancy International Radio filter in it..) The guy who did the testing is K9IMM..

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Date: 5 Dec 89 21:29:31 GMT  
From: ems@apple.com (Mike Smith)  
Subject: airport security  
Message-ID: <5611@internal.Apple.COM>

In article <30500277@ux1.cso.uiuc.edu> phil@ux1.cso.uiuc.edu writes:

>> Ok, ok so my imagination worked on me, but seriously, what on a walkman  
>> could possibly cause the interference being spoken of.

>If it is just a tape player, possibly nothing. If it has ANY digital circuitry  
>or any radio section (AM or FM), then the hazard of RFI exists.

And what about the new 'Video Walkman'? Do the airlines use special FAA certified video decks for the in-flight movies and can I expect that I will be forced to pay \$4 for the earphones rather than watch my own tape in my own seat?... (No, I don't have one yet ... just musing.)

--

E. Michael Smith ems@apple.COM

'Whatever you can do, or dream you can, begin it. Boldness has genius, power and magic in it.' - Goethe

I am not responsible nor is anyone else. Everything is disclaimed.

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Date: 5 Dec 89 18:39:44 GMT  
From: sumax!amc-gw!richm@beaver.cs.washington.edu (Rich Moran)  
Subject: Over-voltage protection for mobiles.  
Message-ID: <1046@amc-gw.amc.com>

In article <29.Nov.89.10:31:20.GMT.#8727@UK.AC.NWL.IA> PJML@IBMA.NERC-WALLINGFORD.AC.UK ("Pete Lucas, NERC-TLC, Swindon U.K.") writes:

{The following circuit is better than the suggested idea of a high power Zener (where would you get one, and how much would it cost?)  
{Mine uses a low power zener and a slave thyristor/SCR,  
{...}

{+----!30-amp-fuse!----->to radio  
{12V !  
{supply. !  
{ ! --+--  
{ ! /~\ 20-volt zener  
{ ! /---\ 1 watt rating.  
{ ! !  
{ ! +--  
{ SCR /~\-----!  
{ 100 volt / \ /  
{ 100amp /----\ \100 ohms  
{ ! / 5 watt resistor  
{ ! !  
{ -earth----->to radio  
{  
{This will protect you if the voltage goes above 20 or so. It has the

I believe you will be much happier with the performance of this circuit if the SCR is installed with the cathode and anode reversed from the polarity shown in your diagram. As shown, the SCR will not conduct until it breaks

down, at some voltage greater than 100V.

73,  
Rich

=====  
Rich Moran  
KZ9K  
richm@amc.com  
=====

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-.- . .- - . -.- -.- . -.-  
Rich Moran  
richm@amc.com

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Date: 5 Dec 89 21:21:57 GMT  
From: ems@apple.com (Mike Smith)  
Subject: starter shortwave radios ...  
Message-ID: <5610@internal.Apple.COM>

In article <4959@sdcc6.ucsd.edu> muller@sdcc10.ucsd.edu (Keith Muller) writes:  
>There are two types of markets:  
>1) DX radios for grabbing those "down in the mud" signals  
>2) Hi-fi radios for quality audio  
>  
>Obviously it is hard for a radio to do both well. Lower cost radios  
~~~~~

Not to me... Why is it hard to do both well? One should be able to  
put switchable bandpass filters in and high gain front ends for DX;  
then switch them out for Hi-Fi. A good audio section is useful for  
either...

>For used radios. Drake R-7 and similar models should be kicking around.  
>Drake made some really good radios even at todays standards. I have no idea  
>what they go for now.

Where does one go to buy used radios? (I've been suffering from a fit  
of nostalgia lately for my tube radio long gone ... I would love to find  
an old tube set somewhere ...)

--

E. Michael Smith ems@apple.COM

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genius, power and magic in it.' - Goethe

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Date: 5 Dec 89 19:25:33 GMT  
From: ems@apple.com (Mike Smith)  
Subject: What about for us SWL's ? Re: Tuning dipoles and antennas.  
Message-ID: <5606@internal.Apple.COM>

In article <1260002@hpmwtlb.HP.COM> timb@hpmwtd.HP.COM (Tim Bagwell) writes:  
>It is not necessary to have a resonant antenna to efficiently radiate energy.

All the stuff I've seen about tuning antennas seems to be written from  
the point of view of someone with a transmitter and SWR meter...  
What about us folks that only have a receiver?

>If an antenna is matched to the source, regardless of how it is matched,  
>all the energy sent down the transmission line is radiated (neglecting,  
>of course, losses in the line, tuner, traps, etc.).

Is it the same for energy coming FROM the antenna?

>You need to define what you mean by radiation efficiency. The fact is that  
>the radiation pattern will be different for a non-resonant antenna than for  
>a resonant one. But this may be desirable in certain situations.

Is this also true for the antenna used for receiving? Somehow I suspect  
not ... The energy from the air has plenty of other places to go if  
the antenna isn't resonant ...

>If your antenna SWR is 2:1, you're losing about 10% of the transmitted power back  
>to the transmitter load! This is power that is not radiated anywhere. Contrast  
>this to a non-resonant but matched antenna which will radiate 100% of the  
>transmitted power (again neglecting losses), albeit, into some different  
>pattern. If the antenna length is only slightly off resonance, the pattern  
>will not be affected significantly.

So you tell me, is SWR important to a SWL's antenna (and, if so, how to  
I measure it without a transmitter? What gadget do I buy?). Or is it  
only important that the antenna resonate? (and, if so, how do I measure  
it? What gadget will tell me 'This antenna is resonant at 6005 MHz.?)

>Even if you tune the antenna exactly to resonance, it is unlikely that it will  
>be matched to the transmission line over any practical bandwidth. This again  
>introduces SWR and a reduction in maximum radiated power.

>So I say use a good quality antenna tuner with parallel wire transmission line

>and don't worry too much about resonating the antenna length.

How important is an antenna tuner to the SWL? (Hey, somebody has to listen to all you folks talking! :-))

--

E. Michael Smith ems@apple.COM

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Date: 5 Dec 89 21:46:59 GMT  
From: pacific.mps.ohio-state.edu!zaphod.mps.ohio-state.edu!uwm.edu!  
ux1.cso.uiuc.edu!tank!cps3xx!usenet@tut.cis.ohio-state.edu (Usenet file owner)  
Subject: What about for us SWL's ? Re: Tuning dipoles and antennas.  
Message-ID: <5673@cps3xx.UUCP>

In article <5606@internal.Apple.COM> ems@Apple.COM (Mike Smith) writes:  
>All the stuff I've seen about tuning antennas seems to be written from  
>the point of view of someone with a transmitter and SWR meter...  
>What about us folks that only have a receiver?

Get a noise bridge.

>>If an antenna is matched to the source, regardless of how it is matched,  
>>all the energy sent down the transmission line is radiated (neglecting,  
>>of course, losses in the line, tuner, traps, etc.).  
>  
>Is it the same for energy coming FROM the antenna?

If the antenna is matched to the feedline, there will be maximum power transfer from the antenna to the feedline. If the feedline is matched to the receiver, there will be maximum power transfer from the feedline to the receiver.

>>You need to define what you mean by radiation efficiency. The fact is that  
>>the radiation pattern will be different for a non-resonant antenna than for  
>>a resonant one. But this may be desirable in certain situations.  
>  
>Is this also true for the antenna used for receiving? Somehow I suspect  
>not ... The energy from the air has plenty of other places to go if  
>the antenna isn't resonant ...

Under ALL circumstances, the receive pattern for an antenna is the same as the transmitting pattern for the same antenna at the same frequency in the same environment. This means that you can measure the radiation pattern either by transmitting a signal and mapping it's strength, or by moving a known signal source around an antenna and mapping it's strength. (Sometimes it's easier to turn the antenna.)

>>If your antenna SWR is 2:1, your losing about 10% of the transmitted power back >>to the transmitter load! This is power that is not radiated anywhere. Contrast >>this to a non-resonant but matched antenna which will radiate 100% of the >>transmitted power (again neglecting losses), albeit, into some different

Not true. The antenna has ohmic losses, and it is in a lossy medium.

>>pattern. If the antenna length is only slightly off resonance, the pattern >>will not be affected significantly.

>  
>So you tell me, is SWR important to a SWL's antenna (and, if so, how to >I measure it without a transmitter? What gadget do I buy?). Or is it >only important that the antenna resonate? (and, if so, how do I measure >it? What gadget will tell me 'This antenna is resonant at 6005 Mhz.?)

A noise bridge. The antenna is resonant when it's impedance is R+j0 ohms.

>>Even if you tune the antenna exactly to resonance, it is unlikely that it will >>be matched to the transmission line over any practical bandwidth. This again >>introduces SWR and a reduction in maximum radiated power.

>  
>>So I say use a good quality antenna tuner with parallel wire transmission line >>and don't worry too much about resonating the antenna length.

>  
>How important is an antenna tuner to the SWL? (Hey, somebody has to >listen to all you folks talking! :-))  
>E. Michael Smith ems@apple.COM

With todays sensitive receivers, the loss of your feedline is probably not all that important. Neither is ensuring that your antenna is (as) perfectly (as possible) matched to the feedline, and likewise ensuring that your feedline is (as) perfectly (as possible) matched to your receiver. With current commercial equipment, I don't think that these things become significantly important until the high VHF region.

In the rare case that original ideas Kenneth J. Hendrickson N8DGN  
are found here, I am responsible. Owen W328, E. Lansing, MI 48825  
Internet: kjh@pollux.usc.edu UUCP: ...!uunet!pollux!kjh

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End of INFO-HAMS Digest V89 Issue #977

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